Atty Docket: TOP 326

IN THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of forming a transflective liquid crystal display device with a wide-viewing angle, comprising the steps of:

providing a first substrate and a second substrate opposite the first substrate;

forming an insulating layer having an uneven surface on the first substrate;

forming ~~at least one~~ an opening in the insulating layer, the opening having a sidewall and a bottom;

forming a conformal reflective electrode in the opening ~~on a sidewall and a bottom of the opening~~ and on part of the insulating layer, wherein

the reflective electrode has ~~at least one~~ an opaque portion and ~~at least one~~ a transparent portion, and ~~the transparent portion of the reflective electrode is located~~

in the opening the reflective electrode includes only the transparent portion and is formed on the sidewall and the bottom;

forming a conformal first alignment film on the reflective electrode;

forming a common electrode on an inner surface of the second substrate;

forming a second alignment film on the common electrode; and

filling a space between the first substrate and the second substrate with negative type liquid crystal molecules added with a chiral agent to form a liquid crystal layer.

2. (original) The method according to claim 1, further comprising the step of:

forming at least one symmetric protruding element on the insulating layer located around the reflective electrode.

3. (original) The method according to claim 2, wherein the symmetric protruding element has a triangular cross-section.

4. (original) The method according to claim 1, wherein, when a voltage is applied between the reflective electrode and the common electrode, an asymmetric electric field occurs at a fringe portion of the reflective electrode.

5. (original) The method according to claim 1, wherein the opaque portion of the reflective electrode is an aluminum layer.

6. (original) The method according to claim 1, wherein the transparent portion of the reflective electrode is an ITO (indium tin oxide) layer.

7. (original) The method according to claim 1, wherein a rubbing treatment is not performed on the first alignment film.

8. (original) The method according to claim 1, wherein a rubbing treatment is not performed on the second alignment film.

9. (original) A method of widening a viewing angle of a transflective liquid crystal display device, comprising the steps of:

providing a first substrate and a second substrate opposite the first substrate;

forming a transparent insulating layer having an uneven surface on the first substrate;

forming at least one opening in the insulating layer;

forming a conformal reflective electrode on a sidewall and a bottom of the opening and part of the insulating layer, wherein the reflective electrode has at least one opaque portion and at least one transparent portion, and the transparent portion of the reflective electrode is located in the opening;

forming at least one symmetric protruding element on the insulating layer located around the reflective electrode;

forming a conformal first alignment film on the reflective electrode and the symmetric protruding element;

forming a common electrode on an inner surface of the second substrate;

forming a second alignment film on the common electrode; and

filling a space between the first substrate and the second substrate with negative type liquid crystal

molecules added with a chiral agent to form a liquid crystal layer.

10. (original) The method according to claim 9, wherein the symmetric protruding element has a triangular cross-section.

11. (original) The method according to claim 9, wherein, when a voltage is applied between the reflective electrode and the common electrode, an asymmetric electric field occurs at a fringe portion of the reflective electrode.

12. (original) The method according to claim 9, wherein the opaque portion of the reflective electrode is an aluminum layer.

13. (original) The method according to claim 9, wherein the transparent portion of the reflective electrode is an ITO (indium tin oxide) layer.

14. (original) The method according to claim 9, wherein a rubbing treatment is not performed on the first alignment film.

15. (original) The method according to claim 9, wherein a rubbing treatment is not performed on the second alignment film.

16. (new) A method of forming a transflective liquid crystal display device with a wide-viewing angle, comprising the steps of:

providing a first substrate and a second substrate opposite the first substrate;

forming an insulating layer having an uneven surface on the first substrate;

forming an opening in the insulating layer, the opening having a sidewall and a bottom;

forming a conformal reflective electrode in the opening and on part of the insulating layer, wherein

the reflective electrode has an opaque portion and a transparent portion, and

in the opening the reflective electrode includes only the transparent portion and is formed on the sidewall and the bottom;

forming a conformal first alignment film on the reflective electrode;

forming a common electrode on an inner surface of the second substrate;

forming a second alignment film on the common electrode; and

filling a space between the first substrate and the second substrate with negative type liquid crystal molecules added with a chiral agent to form a liquid crystal layer,

wherein an asymmetric electric field occurs at a fringe portion of the reflective electrode causing negative type liquid crystal molecules added with the chiral agent having a twisting light property and a continuous domain having different molecular alignment to increase viewing angle of the transflective liquid crystal display when voltage is applied thereto.